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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,813

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Femia Hopwood

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EXAMINER

AL HASHIMI, SARAH

ART UNIT

PAPER NUMBER

2853

MAIL DATE

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02/19/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,813	<b>Applicant(s)</b> HOPWOOD ET AL.	
	<b>Examiner</b> Sarah Al-Hashimi	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) 12, 14 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-11, 13, 15, 18-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/12/2008 has been entered.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

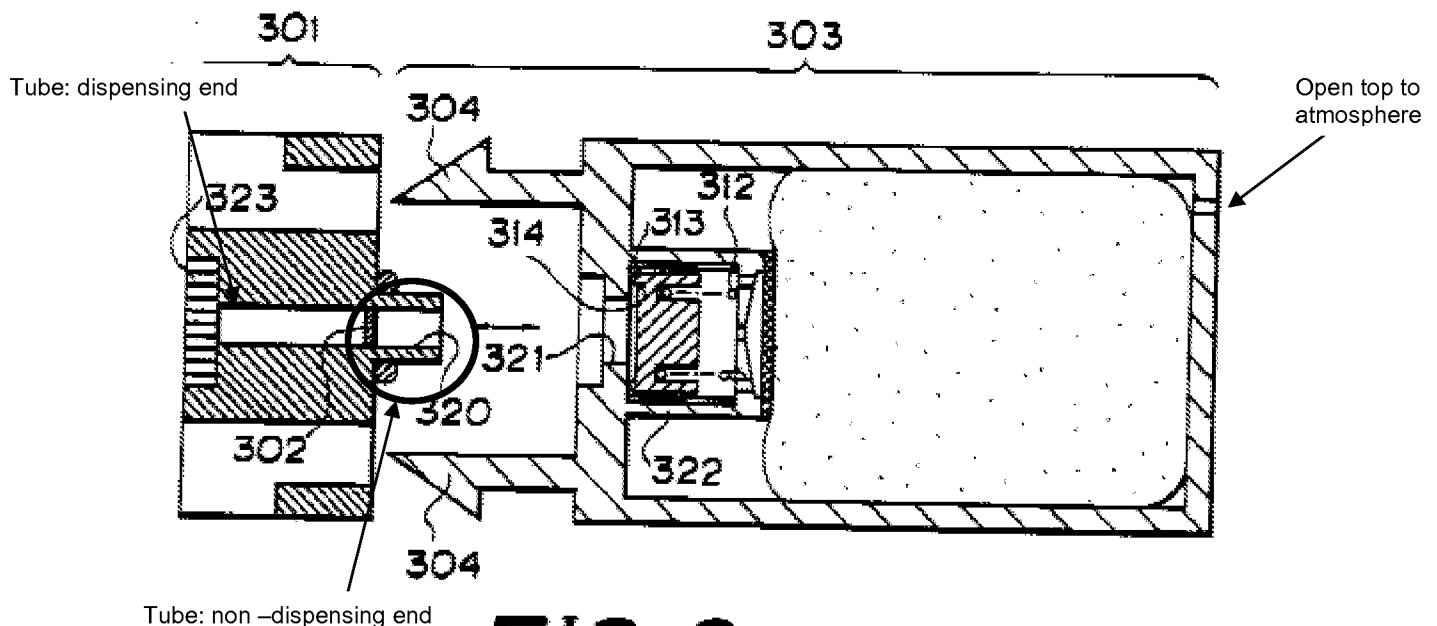
3. Claims 1, 10, 11, 13, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Ujita (US 6,170,939).

Ujita teaches:

Claim 1: a removable reservoir having an open top and an outlet at a base of the reservoir for containing liquid to be dispensed from the apparatus (fig 6 #303); a piezoelectric dispensing tube defining a bore in fluid communication with the reservoir, the piezoelectric dispensing tube comprising a dispensing end and a non-dispensing end (fig 6 #301 and col 1 lines 62-64 "recording head including highly functional components such as piezo-electric elements); a first filter extending across the outlet at the base of the reservoir for filtering liquids passing through the outlet (fig 5 #308); a

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second filter being located between the reservoir and the non-dispensing end of the piezoelectric dispensing tube to prevent particulate matter collected on an underside of the reservoir from entering the piezoelectric dispensing tube (fig 6 #302" --refer to figure below for clarification of tube end); and means for applying a vacuum and pressure to the contents of the reservoir when the reservoir is located in the apparatus, wherein the means for applying the vacuum and pressure is configured to apply the vacuum such that the piezoelectric dispensing tube is operated under low vacuum conditions for droplet dispensing to control a fluid meniscus at an orifice of the piezoelectric dispensing tube (col 14 lines 38-39 "in the case that the liquid is quickly discharged or injected by the function of suction induced by a pump").

**FIG. 6**

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Claim 10: a reservoir for containing liquid to be dispensed from the device, the reservoir comprising an open top and an outlet at a base of the reservoir (fig 6 #303);

a first filter extending across the outlet at the base of the reservoir for filtering liquids passing through the outlet (fig 5 #308);

a piezoelectric dispensing tube defining a bore in fluid communication with the reservoir, the piezoelectric dispensing tube having a dispensing end and a non-dispensing end (fig 6 #301);

a second filter being located between the outlet at the base of the reservoir and the non-dispensing end of the piezoelectric dispensing tube (fig 6 #302); and

means for removably attaching the non-dispensing end of the piezoelectric dispensing tube in fluid communication with the reservoir, the attaching means comprising a closure means disposed at the base of the reservoir for closing the outlet of the reservoir when the reservoir is not attached to the piezoelectric dispensing tube (fig 5 and fig 6 show attachable/detachable parts #301 and 303 and #313 is the closure means); and means for applying a vacuum and pressure to the contents of the reservoir when the reservoir is located in the apparatus, wherein the means for applying the vacuum and pressure is configured to apply the vacuum such that the piezoelectric dispensing tube is operated under low vacuum conditions for droplet dispensing to control a fluid meniscus at an orifice of the piezoelectric dispensing tube (col 14 lines 38-39 “in the case that the liquid is quickly discharged or injected by the function of suction induced by a pump”).

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Claim 11: an annular foot portion on which the base of the reservoir is positionable wherein the closure means is spaced from the surface on which the foot rests (fig 5).

Claim 13: the closure means is a septum (fig 6 #313).

Claim 15: a reservoir for containing liquid to be dispensed from the device and comprising an open top and an outlet at a base of the reservoir (fig 6 #303); a piezoelectric dispensing tube defining a bore in fluid communication with the reservoir, the piezoelectric dispensing tube having a dispensing end and a non-dispensing end (fig 6 #301);

a first filter extending across the outlet of the reservoir for filtering liquids passing through the outlet (fig 5 #308);

a secondary filter assembly removably attachable to the base of the reservoir, the secondary filter assembly defining a bore in fluid communication with the reservoir when the secondary filter assembly is attached to the base of the reservoir (fig 6 #301), the secondary filter assembly comprising means for removably attaching the non-dispensing end of the piezoelectric dispensing tube in fluid communication with the bore of the secondary filter assembly (fig 6) and a second filter extending across the bore of the secondary filter assembly (fig 6 #302); means for closing the outlet of the reservoir when the removable secondary filter assembly is not attached to the reservoir (fig 6 #313); and means for applying a vacuum and pressure to the contents of the reservoir when the reservoir is located in the apparatus, wherein the means for applying the vacuum and pressure is configured to apply the vacuum such that the piezoelectric dispensing tube is operated under low vacuum conditions for droplet dispensing to

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control a fluid meniscus at an orifice of the piezoelectric dispensing tube (col 14 lines 38-39 "in the case that the liquid is quickly discharged or injected by the function of suction induced by a pump").

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ujita (US 6,170,939) in view of Kiser (US 6,854,595).

Ujita does not teach but Kiser teaches:

Claim 2: the top of the reservoir is defined to allow liquids to be poured into the reservoir (fig 6).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ujita to incorporate the top of the reservoir is defined to allow liquids to be poured into the reservoir as taught by Kiser in order to facilitate ink replenishment.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ujita (US 6,170,939) in view of Kiser (US 6,854,595) as applied to claim 2 above, and further in view of Seidler (US 3,774,455).

Ujita in view of Kiser does not teach but Seidler teaches:

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Claim 3: the top of the reservoir is flared outwardly (col 2 lines 21-2 "container is flared").

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Ujita in view of Kisler to further incorporate the top of the reservoir is flared outwardly as taught by Seidler in order prevent messy spills by making a wider area to pour liquid into.

4. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ujita (US 6,170,939) in view of Kiser (US 6,854,595) and further in view of Seidler (US 3,774,455) as applied to claim 3 above, and further in view of Jung (US 3,961,337).

Ujita teaches:

Claim 6: a seat for receiving the removable reservoir (fig 5).

Ujita in view of Kisler and further in view of Seidler doesn't teach but Jung teaches:

Claim 4: the means for applying a vacuum and pressure to the contents of the reservoir when the reservoir is located in the apparatus comprises a plunger shaped and configured to abut with and seal the top of the reservoir (col 4 lines 1-4 "a plunger 33 is forced downward against the compressible reservoir 30 to force the ink through an ink-supply line 24, an integral filter (not shown) at the nozzle 12, and out through the small orifice of the nozzle 12").

Claim 5: the plunger comprises a through bore to permit the application of vacuum or pressure to the reagent vessel through the bore (col 4 line 29-31 "the plunger 33 allows the resiliency of the material of the reservoir 30 to form a partial vacuum in the reservoir 30" and fig 3).



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Claim 6: means for moving the plunger up and down towards and away from the seat (col 4 lines 1-4 “a plunger 33 is forced downward against the compressible reservoir 30 to force the ink through an ink-supply line 24, an integral filter (not shown) at the nozzle 12, and out through the small orifice of the nozzle 12”).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ujita in view of Kisler and further in view of Seidler to further incorporate the means for applying a vacuum and pressure to the contents of the reservoir when the reservoir is located in the apparatus comprises a plunger shaped and configured to abut with and seal the top of the reservoir, the plunger defining a through bore to permit the application of vacuum and pressure to the reservoir through the bore as taught by Jung for a controlled pressure application to the ink reservoir.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ujita (US 6,170,939) in view of Pawlowski (US 6,137,513).

Ujita teaches:

Claim 18: the means of closing the outlet of the reservoir is a septum (fig 6 #313).

Ujita does not teach but Pawlowski teaches:

Claim 18: a hollow needle for piercing the septum projects from the secondary filter assembly (fig 3a #60).

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Ujita to incorporate a hollow needle for piercing the septum projects from the secondary filter assembly as taught by Pawlowski (US 6,137,513) in order to ensure a proper connection of the printhead and reservoir.

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6. Claims 19&20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ujita (US 6,170,939) in view of Jung (US 3,961,337).

Ujita teaches:

Claim 19: a reservoir for containing liquid to be dispensed from the device, the reservoir comprising an open top and an outlet at a base of the reservoir (fig 6 #303);

a first filter extending across the outlet for filtering liquids passing through the outlet (fig 5 #308);

a piezoelectric dispensing tube defining a bore in fluid communication with the reservoir, the piezoelectric dispensing tube having a dispensing end and a non-dispensing end (fig 6 #301);

a secondary filter assembly removably attachable to the base of the reservoir, the secondary filter assembly defining a bore in fluid communication with the reservoir when the secondary filter assembly is attached to the base of the reservoir, the secondary filter assembly comprising means for removably attaching the non-dispensing end of the piezoelectric dispensing tube in fluid communication with the bore of the secondary filter assembly and a second filter extending across the bore of the secondary filter assembly (fig 6 #302);

means for removably attaching the non-dispensing end of the piezoelectric dispensing tube in fluid communication with the reservoir (fig 6);

a closure means disposed at the base of the reservoir for closing the outlet of the reservoir when the removable secondary filter is not attached to the reservoir (fig 6 #313);

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an apparatus defining a seat for receiving the removable reservoir in the apparatus (fig 5).

Claim 20: a reservoir for containing liquid to be dispensed from the device, the reservoir comprising an open top and an outlet at a base of the reservoir (fig 6 #303); a first filter extending across a base of the outlet for filtering liquids passing through the outlet (fig 5 #308);

a piezoelectric tube defining a bore in fluid communication with the reservoir, the piezoelectric dispensing tube having a dispensing end and a non dispensing end (fig 6 #301);

a second filter being located at the non-dispensing end of the piezoelectric dispensing tube (fig 6 #302);

means for removably attaching the non-dispensing end of the piezoelectric dispensing tube in fluid communication with the reservoir, the attaching means comprising a closure means disposed at the base of the reservoir for closing the outlet of the reservoir when the reservoir is not attached to the piezoelectric dispensing tube (fig 6 #313);

Ujita doesn't teach but Jung teaches:

Claim 19: means for applying a vacuum and pressure to the contents of the reservoir, the means for applying the vacuum and pressure comprising a plunger shaped and configured to abut with and seal the open top of the reservoir, the plunger defining a through bore to permit the application of vacuum and pressure to the reservoir through the bore, the plunger being movable relative to the seat, wherein the means for applying

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the vacuum and pressure is configured to apply the vacuum such that the piezoelectric dispensing tube is operated under low vacuum conditions for droplet dispensing to control a fluid meniscus at an orifice of the piezoelectric dispensing tube (col 4 lines 1-4 “a plunger 33 is forced downward against the compressible reservoir 30 to force the ink through an ink-supply line 24, an integral filter (not shown) at the nozzle 12, and out through the small orifice of the nozzle 12”).

Claim 20: means for applying a vacuum and pressure to the contents of the reservoir when the reservoir is located in the device, the means for applying the vacuum and pressure comprising a plunger shaped and configured to abut with and seal the open top of the reservoir, the plunger defining a through bore to permit the application of vacuum and pressure to the reservoir through the bore, wherein the means for applying the vacuum and pressure is configured to apply the vacuum such that the piezoelectric dispensing tube is operated under low vacuum conditions for droplet dispensing to control a fluid meniscus at an orifice of the piezoelectric dispensing tube, the method comprising the steps of: pouring a liquid into the reservoir via the open top; applying the plunger to the open top to seal the open top and applying a vacuum and/or pressure to the contents of the reservoir (col 4 lines 1-4 “a plunger 33 is forced downward against the compressible reservoir 30 to force the ink through an ink-supply line 24, an integral filter (not shown) at the nozzle 12, and out through the small orifice of the nozzle 12”); and dispensing one or more droplets of liquid from the dispensing end (fig 3).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ujita to incorporate means for applying a vacuum and

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pressure to the contents of the reservoir when the reservoir is located in the device, the means for applying the vacuum and pressure comprising a plunger shaped and configured to abut with and seal the open top of the reservoir, the plunger defining a through bore to permit the application of vacuum and pressure to the reservoir through the bore, wherein the means for applying the vacuum and pressure is configured to apply the vacuum such that the piezoelectric dispensing tube is operated under low vacuum conditions for droplet dispensing to control a fluid meniscus at an orifice of the piezoelectric dispensing tube, the method comprising the steps of: pouring a liquid into the reservoir via the open top; applying the plunger to the open top to seal the open top and applying a vacuum and/or pressure to the contents of the reservoir as taught by Jung in order to enhance fluid communication between the reservoir and nozzles.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Al-Hashimi whose telephone number is 571 272 7159. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571 272 2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either PAIR or Public PAIR. Status information for unpublished applications is available through PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SA/

/Stephen D Meier/  
Supervisory Patent Examiner, Art Unit 2853